

## ABSTRACT OF THE DISCLOSURE

A method of forming a dielectric layer suitable for use as the gate dielectric layer in a MOSFET includes passivating the surface of a semiconductor substrate at a temperature less than approximately 80°C and nitridizing the passivation layer. In particular embodiments, passivating a silicon wafer includes forming a hydroxy-silicate layer at approximately 24°C. In a further aspect of the present invention, an integrated circuit includes a plurality of insulated gate field effect transistors, wherein various ones of the plurality of transistors have gate dielectric layers of the nitridized passivation layer.